

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Sin J. Lee Examiner #: 76060 Date: 1-13-2004
 Art Unit: 1752 Phone Number 301 272-1333 Serial Number: 10/073,693
 Mail Box and Bldg/Room Location: 9D60 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

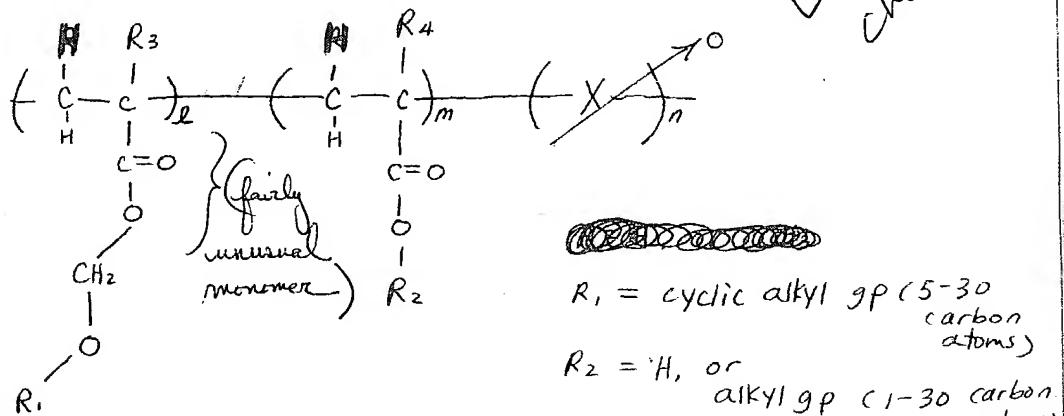
Title of Invention: Polymer for Chemically Amplified Resist & Chemically Amplified Resist

Inventors (please provide full names): Park, Joohyeon ; Seo, Dongchul ; Lee, Jongbum ; Jeon, Hyunpyo ; Kim, Seongju Composition containing the same

Earliest Priority Filing Date: 7-11-2002

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please Search for the following Polymer:



$$l = 0.05 - 0.9$$

$$m = 0.1 - 0.7$$

$$n = 0 - 0.7 (\because n \text{ unit doesn't have to be there})$$

STAFF USE ONLY

Type of Search Vendors and cost where applicable

Searcher: <u>EL</u>	NA Sequence (#)	STN	\$ 260.74
Searcher Phone #:	AA Sequence (#)	Dialog	
Searcher Location:	Structure (#)	(3) Questel/Orbit	
Date Searcher Picked Up:	Bibliographic	(and) Dr. Link	
Date Completed: <u>1-14-04</u>	Litigation	Lexis/Nexis	
Searcher Prep & Review Time: <u>5</u>	Fulltext	Sequence Systems	
Clerical Prep Time:	Patent Family	WWW/Internet	
Online Time: <u>65</u>	Other	Other (specify)	

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FILE 'REGISTRY' ENTERED AT 13:28:20 ON 14 JAN 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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=> d his

FILE 'LREGISTRY' ENTERED AT 12:31:12 ON 14 JAN 2004

L1 STR
L2 STR

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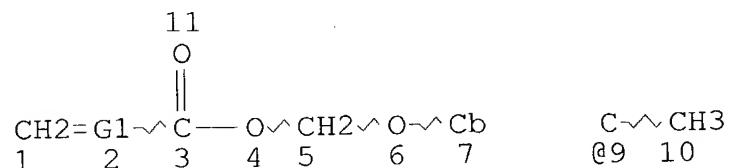
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L5 STR L1
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SAV L8 LEE693B/A
L9 2 S L5 AND L2 AND L3 SSS SAM SUB=L8
L10 0 S L1 AND L2 AND L3 SSS SAM SUB=L8
L11 0 S L1 AND L3 SSS SAM SUB=L8
L12 6 S L1 AND L3 SSS FUL SUB=L8
SAV L12 LEE693C/A
L13 41 S L5 AND L2 AND L3 SSS FUL SUB=L8
SAV L13 LEE693D/A

FILE 'ZCAPLUS' ENTERED AT 13:24:54 ON 14 JAN 2004

L14 3 S L12
L15 28 S L13
L16 156815 S RESIST OR RESISTS OR PHOTORESIST? OR MASK? OR PHOTOMASK
L17 8 S L15 AND L16
L18 7 S L17 NOT L14

FILE 'REGISTRY' ENTERED AT 13:28:20 ON 14 JAN 2004

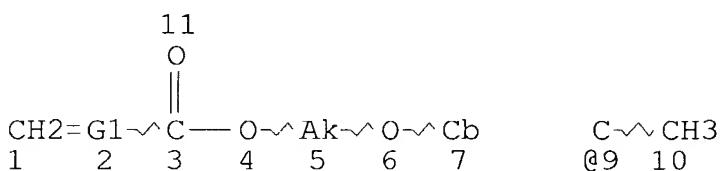
=> d l12 que stat
L1 STR



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VAR G1=CH/9  
NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM  
GGCAT IS SAT AT 7  
DEFAULT ECLEVEL IS LIMITED  
ECOUNT IS M5-X30 C AT 7
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GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE
L3 SCR 2043
L5 STB



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VAR G1=CH/9
NODE ATTRIBUTES:
CONNECT IS E2 RC AT      5
DEFAULT MLEVEL IS ATOM
GGCAT    IS SAT  AT      5
GGCAT    IS SAT  AT      7
DEFAULT ECLEVEL IS LIMITED
ECOUNT   IS M5-X30 C  AT     7
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GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE
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L12 6 SEA FILE=REGISTRY SUB=L8 SSS FUL L1 AND L3

100.0% PROCESSED 57 ITERATIONS 6 ANSWERS
SEARCH TIME: 00.00.01

=> file zcaplus
FILE 'ZCAPLUS' ENTERED AT 13:28:43 ON 14 JAN 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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=> d 114 1-3 ibib abs hitstr hitind

L14 ANSWER 1 OF 3 ZCPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2003:56543 ZCPLUS
 DOCUMENT NUMBER: 138:115164
 TITLE: Resist compositions for columnar spacer of
 liquid crystal displays
 INVENTOR(S): Bae, Yoo-li; Cha, Hyuk-jin; Lee, Jae-hwan; Hong,
 Seong-jae; Lee, Keun-joo; Jung, Yong-man; Choi,
 Sook-young; Ryu, Mi-sun; Kim, Young-keun; Kim,
 Tae-yeong; Kim, Woong; Yoo, Chun-woo; Lee,
 Dae-woo; Koo, Dong-kun; Kwon, Moo-hyun; Lee,
 Chul-woo; Yoon, Sang-il
 PATENT ASSIGNEE(S): Adams Technology Co., Ltd., S. Korea
 SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003021839	A2	20030124	JP 2002-97720	20020329
JP 3467488	B2	20031117	CN 2002-2108748	20020329
CN 1379060	A	20021113	KR 2001-17151	A 20010331
			KR 2002-11196	A 20020302

PRIORITY APPLN. INFO.:

AB The compns., which give resist film with uniform thickness, good resoln., high residual film rate, and good pattern profile, contain (a) binder resin selected from CH₂CHX(CO₂Y₁)CH₂CX(CO₂H)CH₂CX(CO₂Y₂) [X = H, Me; Y₁ = C₂-16 alkyl, hydroxyalkyl; Y₂ = (meth)acryloyl group-contg. alicyclic group (20 Markush structures are given)], random copolymer A-B-C [monomer unit A = benzyl methacrylate, styrene, .alpha.-methylstyrene, isobornyl (meth)acrylate, dicyclopentanyl (meth)acrylate, dicyclopentenyl (meth)acrylate, dicyclopentanylethoxy(meth)acrylate, dicyclopentenyloxy(meth)acrylate; monomer unit B = acrylic acid, methacrylic acid; monomer unit C = glycidyl methacrylate, hydroxyethyl methacrylate, dimethylaminomethacrylate, acrylamide], or their mixt. 10-40, (b) polyfunctional monomers having ethylenically-unsatd. bond 1-20, (c) photopolymn. initiators 1-10, (d) Si compds. having epoxy group 0.001-0.1, and optionally (e) elastomers having ethylenically-unsatd. bond 1-20 parts. (e) increases elasticity of display panel and prevents damage of black matrixes, color filter pixels, etc., due to external pressure.

IT 488727-07-7 488727-10-2 488727-13-5

(resist compns. contg. alicyclic acrylate-contg. binder resins,
having ethylenically-unsatd. polyfunctional monomers, and epoxy
silanes for columnar spacer of liq. crystal displays)

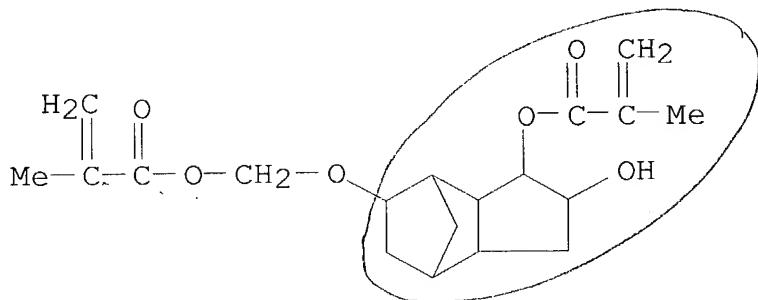
RN 488727-07-7 ZCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with methyl
2-methyl-2-propenoate and [[octahydro-2-hydroxy-3-[(2-methyl-1-oxo-2-
propenyl)oxy]-4,7-methano-1H-inden-5-yl]oxy]methyl
2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 488727-06-6

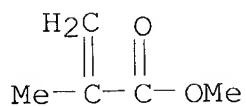
CMF C19 H26 O6



CM 2

CRN 80-62-6

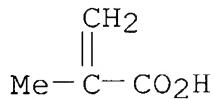
CMF C5 H8 O2



CM 3

CRN 79-41-4

CMF C4 H6 O2



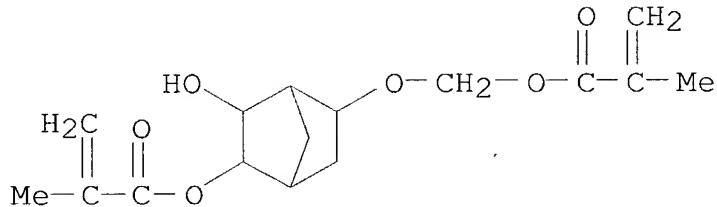
RN 488727-10-2 ZCPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with [[6-hydroxy-5-[(2-methyl-1-oxo-2-propenyl)oxy]bicyclo[2.2.1]hept-2-yl]oxy]methyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 488727-09-9

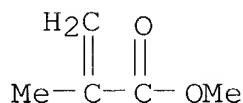
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CM 2

CRN 80-62-6

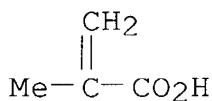
CMF C5 H8 O2



CM 3

CRN 79-41-4

CMF C4 H6 O2



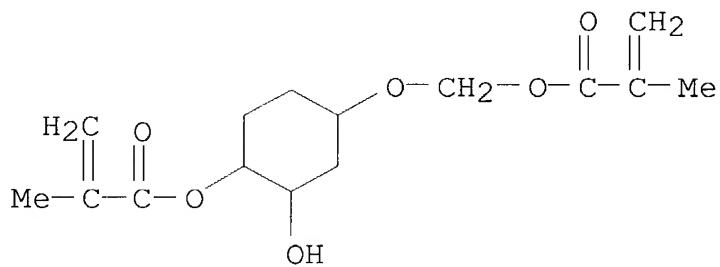
RN 488727-13-5 ZCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with [[3-hydroxy-4-[(2-methyl-1-oxo-2-propenyl)oxy]cyclohexyl]oxy]methyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 488727-12-4

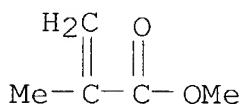
CMF C15 H22 O6



CM 2

CRN 80-62-6

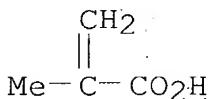
CMF C5 H8 O2



CM 3

CRN 79-41-4

CMF C4 H6 O2



IC ICM G02F001-1339
 ICS G03F007-027; G03F007-038; G03F007-075
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 IT 2530-83-8 29570-58-9, Dipentaerythritol hexaacrylate 60506-81-2,
 Dipentaerythritol pentaacrylate 488727-04-4 **488727-07-7**
488727-10-2 488727-13-5 488727-16-8
 488727-18-0 488727-21-5 488727-25-9
 (resist compns. contg. alicyclic acrylate-contg. binder resins, having ethylenically-unsatd. polyfunctional monomers, and epoxy silanes for columnar spacer of liq. crystal displays)

L14 ANSWER 2 OF 3 ZCPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1996:485677 ZCPLUS
 DOCUMENT NUMBER: 125:117570
 TITLE: Curable resin compositions suitable for acid rain-resistant coatings with good tape adhesion properties
 INVENTOR(S): Takagi, Takeshi; Sasaki, Naryuki; Tanaka, Yasuo;
 Okude, Yoshitaka
 PATENT ASSIGNEE(S): Nippon Paint Co Ltd, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08120149	A2	19960514	JP 1994-262246	19941026
PRIORITY APPLN. INFO.:			JP 1994-262246	19941026
AB	The title compns. contain (A) 40-90% acrylic polymers (OH value 20-40, acid value 1-100, Mn 500-50,000) obtained by polymg. 1-80% OH-contg. (meth)acrylates and 20-99% other ethylenically unsatd. comonomers and (B) 10-60% melamine resins. A polymer A was prepnd. from 1,4-cyclohexanedimethanol monoacrylate 17.6, 1,4-cyclohexanediethanol monomethacrylate 21.4, acrylic acid 2.6, styrene 20, Et acrylate 10, Et methacrylate 10, iso-Bu acrylate 10, and iso-Bu methacrylate 8.4 parts and used with U-Van 128.			
IT	179745-29-0P (curable resin compns. suitable for acid rain-resistant coatings			

with good tape adhesion properties)

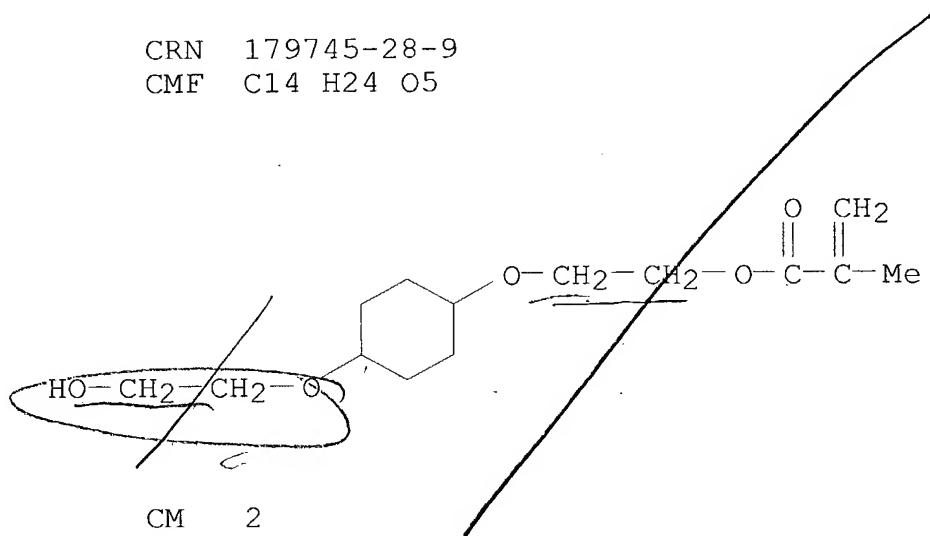
RN 179745-29-0 ZCPLUS

CN Hexanoic acid, 6-hydroxy-, 2-[(1-oxo-2-propenyl)oxy]ethyl ester,
 polymer with butyl 2-methyl-2-propenoate, 1,1-dimethylethyl
 2-propenoate, ethenylbenzene, formaldehyde, 2-[[4-(2-
 hydroxyethoxy)cyclohexyl]oxy]ethyl 2-methyl-2-propenoate,
 2-hydroxyethyl 2-methyl-2-propenoate, [[4-
 (hydroxymethoxy)cyclohexyl]oxy]methyl 2-propenoate, 2-propenoic acid
 and 1,3,5-triazine-2,4,6-triamine (9CI) (CA INDEX NAME)

CM 1

CRN 179745-28-9

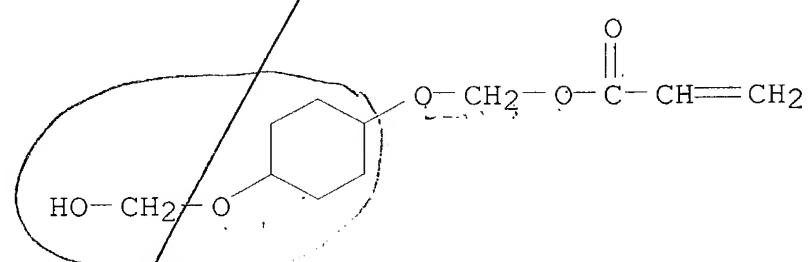
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CM 2

CRN 179745-27-8

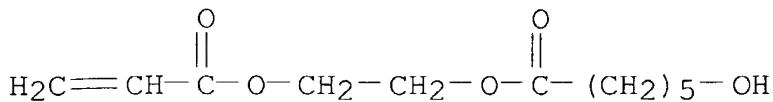
CMF C11 H18 O5



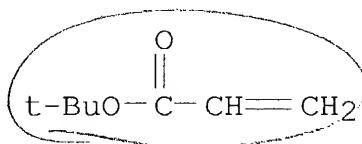
CM 3

CRN 80413-54-3

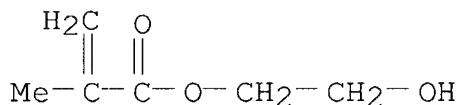
CMF C11 H18 O5



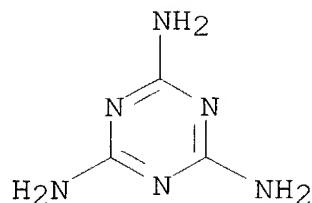
CM 4

CRN 1663-39-4
CMF C7 H12 O2

CM 5

CRN 868-77-9
CMF C6 H10 O3

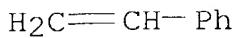
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CRN 108-78-1
CMF C3 H6 N6

CM 7

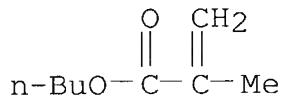
CRN 100-42-5

CMF C8 H8



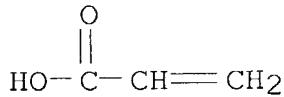
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CRN 97-88-1
 CMF C8 H14 O2



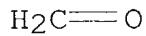
CM 9

CRN 79-10-7
 CMF C3 H4 O2



CM 10

CRN 50-00-0
 CMF C H2 O

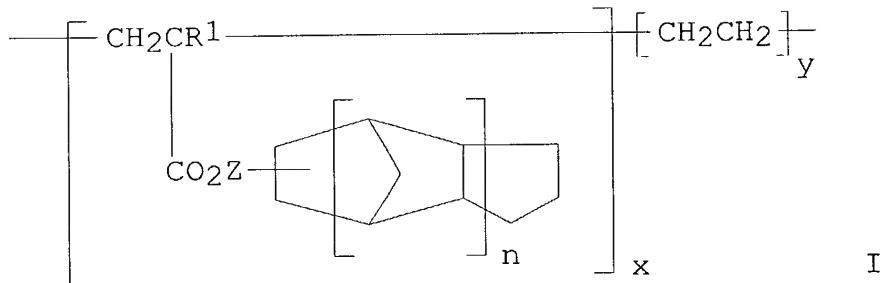


IC ICM C08L033-14
 ICS B05D001-36; B05D007-14; C08L061-28; C09D133-14; C09D161-28
 CC 42-10 (Coatings, Inks, and Related Products)
 IT 179745-17-6P 179745-20-1P 179745-23-4P 179745-26-7P
179745-29-0P 179745-32-5P 179745-35-8P 179745-36-9P
 (curable resin compns. suitable for acid rain-resistant coatings
 with good tape adhesion properties)

L14 ANSWER 3 OF 3 ZCPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1990:432071 ZCPLUS
 DOCUMENT NUMBER: 113:32071
 TITLE: Acrylic polymer-based optical disks
 INVENTOR(S): Tajima, Tetsuo; Miwa, Hiroaki; Sudo, Ryoichi
 PATENT ASSIGNEE(S): Hitachi, Ltd., Japan; Hitachi Maxell, Ltd.
 SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01313513	A2	19891219	JP 1988-141720	19880610
			JP 1988-141720	19880610

PRIORITY APPLN. INFO.:
 GI



AB Optical disks with excellent transparency, heat resistance, moisture resistance, impact strength, and sensitivity are composed of alicyclic acrylate copolymers I ($R_1 = H, Me$; $Z = CH_2, C_1-3$ alkyleneoxy; $n = 1-4$; $x/y = 50/50-95/5$). Thus, an injection molded plate composed of I ($R_1 = H$, $Z = CH_2CH_2O$, $n = 1$, $x/y = 50/50$) showed a light transmittance $\geq 90\%$, a glass transition point $\geq 140^\circ$, and a DuPont impact strength of ≥ 100 cm and gave optical disks with no warpage after 4 h at 120° vs., 90, 70, 10, and warpage, resp., for poly(Me methacrylate) disks.

IT 127823-30-7 127823-32-9
 (optical disks, transparent, with resistance to heat and moisture and impact)

RN 127823-30-7 ZCPLUS

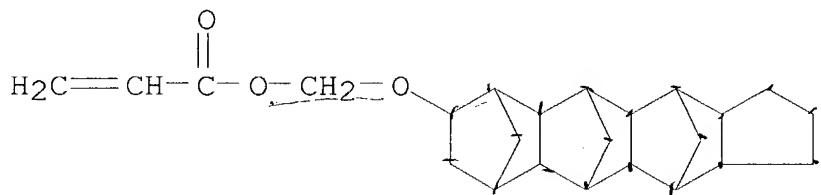
CN 2-Propenoic acid, [(hexadecahydro-4,11:5,10:6,9-trimethano-1H-cyclopent[b]anthracen-7-yl)oxy]methyl ester, polymer with ethene

(9CI) (CA INDEX NAME)

CM 1

CRN 127823-29-4

CMF C24 H32 O3



CM 2

CRN 74-85-1

CMF C2 H4

 $\text{H}_2\text{C}=\text{CH}_2$

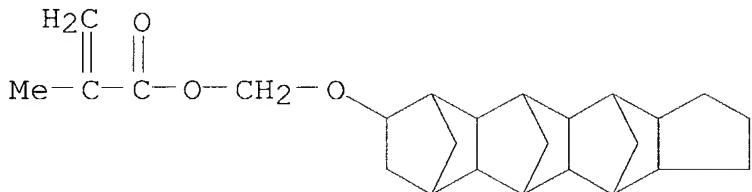
RN 127823-32-9 ZCAPLUS

CN 2-Propenoic acid, 2-methyl-, [(hexadecahydro-4,11:5,10:6,9-trimethano-1H-cyclopent[b]anthracen-7-yl)oxy]methyl ester, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

CRN 127823-31-8

CMF C25 H34 O3



CM 2

CRN 74-85-1
CMF C2 H4



IC ICM C08F220-18
ICS C08F220-26; G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 127823-19-2 127823-20-5 127823-22-7 127823-24-9 127823-26-1
127823-28-3 127823-30-7 127823-32-9
(optical disks, transparent, with resistance to heat and moisture and impact)
=> d 118 1-7 cbib abs hitst* hitnd

(structurally pretty junky)

L18 ANSWER 1 OF 7 ZCPLUS COPYRIGHT 2004 ACS on STN
2000:823001 Document No. 134:23500 Chemically amplified positive-working **resist** and pattern formation using same. Maeda, Katsumi; Iwasa, Shigeyuki; Hasegawa, Etsuo (Nec Corp., Japan). Jpn. Kokai Tokkyo Koho JP 2000321772 A2 20001124, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-128838 19990510.
AB The title **resist** contains a polymer having a repeating unit CH₂CR₁(CO₂G) (R₁ = H or Me; G = alicyclic hydrocarbon having a 1,2-diol structure) and a photoacid generator that generates an acid by exposure with light. The **resist** is coated on a substrate to be processed, patternwise exposed to light of wavelength 180-220 nm, baked, and developed to form a pattern. The **resist** shows high transparency toward light of wavelength < 220 nm and provides high resoln. patterns showing good dry etch resistance and adhesion to substrate.

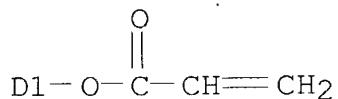
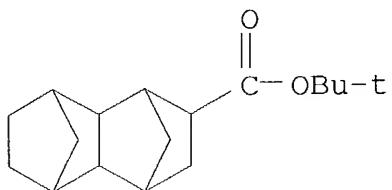
IT 309260-47-7P
(chem. amplification-type **resist** contg. acrylic copolymer and photoacid generator)

RN 309260-47-7 ZCPLUS
CN 1,4:5,8-Dimethanonaphthalene-2-carboxylic acid, decahydro-6(or 7)-[(1-oxo-2-propenyl)oxy]-, 1,1-dimethylethyl ester, polymer with 2-methyl-2-propenoic acid and 2-[(octahydro-1,2(or 2,3)-dihydroxy-4,7-methano-1H-inden-5-yl)oxy]ethyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 217652-52-3
CMF C20 H28 O4

CCI IDS

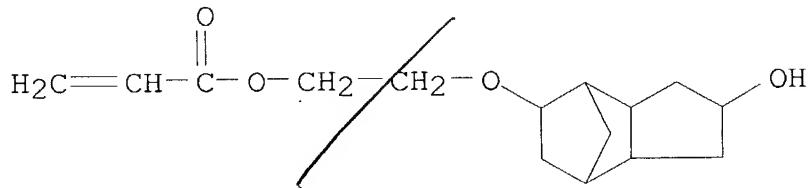


CM 2

CRN 140919-18-2

CMF C15 H22 O5

CCI IDS

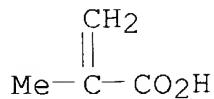


D1-OH

CM 3

CRN 79-41-4

CMF C4 H6 O2



IC ICM G03F007-039
 ICS C08F020-28; C08F220-28; C08K005-00; C08L033-14; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 38, 76
 ST pos **resist** acrylic copolymer lithog; alicyclic diol
 acrylate copolymer **resist**; semiconductor device
 fabrication **resist**
 IT Lithography
 (chem. amplification-type **resist** contg. acrylic
 copolymer and photoacid generator for lithog.)
 IT Semiconductor device fabrication
 (chem. amplification-type **resist** contg. acrylic
 copolymer and photoacid generator for semiconductor device
 fabrication)
 IT **Resists**
 (pos.-working; chem. amplification-type **resist** contg.
 acrylic copolymer and photoacid generator)
 IT 247262-12-0P 247565-06-6P 308831-06-3P 309260-44-4P
 309260-46-6P **309260-47-7P**
 (chem. amplification-type **resist** contg. acrylic
 copolymer and photoacid generator)
 IT 66003-78-9, Triphenylsulfonium triflate
 (chem. amplification-type **resist** contg. acrylic
 copolymer and photoacid generator)

L18 ANSWER 2 OF 7 ZCPLUS COPYRIGHT 2004 ACS on STN
 2000:713000 Document No. 133:303554 Polymers having diol structures,
 their negative **photoresist** compositions, and pattern
 formation. Iwasa, Shigeyuki; Maeda, Katsumi; Hasegawa, Etsuo (NEC
 Corp., Japan). Jpn. Kokai Tokkyo Koho JP 2000281729 A2 20001010, 21
 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-87403
 19990330.

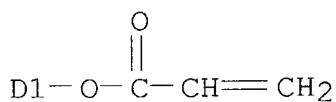
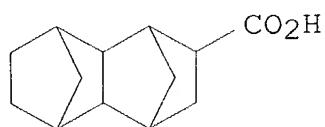
AB The polymers have repeating units $\text{CH}_2\text{CR}_1[\text{C}(:\text{O})\text{OR}_2\text{X}]$ ($\text{R}_1 = \text{H}, \text{Me}; \text{R}_2 = \text{C}_2\text{-6 alkylene}$; $\text{X} = \text{diol-contg. alicyclic alkyl}$). The
 photoresist compns. contain (A) the polymers, (B)
 crosslinking agents having $\text{C}(:\text{O})\text{NCH}_2\text{OR}_1\text{X}$ ($\text{R}_1 = \text{H}, \text{C}_1\text{-6 alkyl}, \text{C}_3\text{-6}$
 oxoalkyl), and (C) photoacid generators. Patterns are formed by
 applying the **photoresist** compns. on substrates, exposing
 with 180-220-nm light, baking, and developing. The
 photoresist compns. are useful in photolithog. for manuf. of
 semiconductor devices. The **photoresist** compns. show high
 transparency for ArF light and good dry-etching resistance and give
 patterns without deformation by swelling and peeling.

IT **300725-76-2P**
 (polymers having diol-contg. alicyclic groups with high
 dry-etching resistance for neg. **photoresists**)

RN 300725-76-2 ZCPLUS
 CN 1, 4:5, 8-Dimethanonaphthalene-2-carboxylic acid, decahydro-6(or
 7)-[(1-oxo-2-propenyl)oxy]-, polymer with methyl
 2-methyl-2-propenoate and 2-[[octahydro-1,2(or 2,3)-dihydroxy-4,7-
 methano-1H-inden-5-yl]oxy]ethyl 2-propenoate (9CI) (CA INDEX NAME)

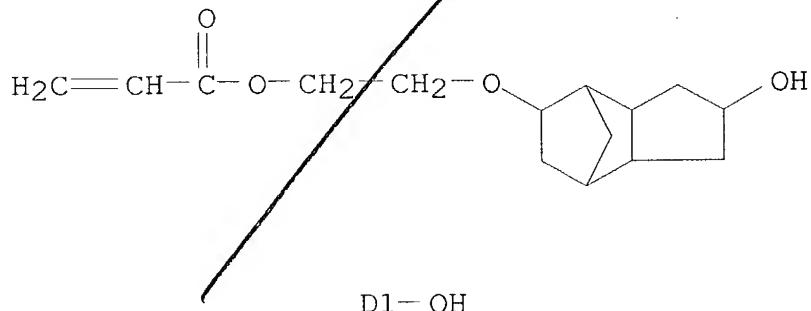
CM 1

CRN 195398-52-8
 CMF C16 H20 O4
 CCI IDS



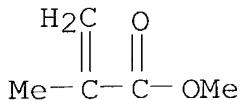
CM 2

CRN 140919-18-2
 CMF C15 H22 O5
 CCI IDS



CM 3

CRN 80-62-6
 CMF C5 H8 O2



IC ICM C08F220-26
 ICS C08L033-14; G03F007-004; G03F007-038

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 76

ST diol polymer neg **photoresist** lithog semiconductor; dry etching resistance diol polymer **photoresist**; pattern formation diol polymer **photoresist** lithog; alicyclic diol acrylate polymer neg **photoresist**

IT Negative **photoresists**
 Semiconductor device fabrication
 (polymers having diol-contg. alicyclic groups with high dry-etching resistance for neg. **photoresists**)

IT 4356-60-9 13747-14-3 15968-37-3 17464-88-9 221206-62-8
 (crosslinking agents; polymers having diol-contg. alicyclic groups with high dry-etching resistance for neg. **photoresists**)

IT 211377-75-2
 (crosslinking catalysts; polymers having diol-contg. alicyclic groups with high dry-etching resistance for neg. **photoresists**)

IT 1886-74-4 56530-39-3 66003-78-9, Triphenylsulfonium trifluoromethanesulfonate 157959-61-0, Bis(tert-butylphenyl)iodonium trifluoromethanesulfonate 171292-12-9 194999-85-4
 (photoacid generators; polymers having diol-contg. alicyclic groups with high dry-etching resistance for neg. **photoresists**)

IT 242136-37-4P 242136-38-5P 300725-70-6P 300725-71-7P
 300725-73-9P 300725-75-1P 300725-76-2P 300725-77-3P
 300725-79-5P
 (polymers having diol-contg. alicyclic groups with high dry-etching resistance for neg. **photoresists**)

L18 ANSWER 3 OF 7 ZCPLUS COPYRIGHT 2004 ACS on STN
 1998:735444 Document No. 130:45300 Photosensitive **resist**
 composition and patterning using it for manufacture of semiconductor device. Shinoda, Naomi; Gokawachi, Toru; Nakase, Makoto; Asakawa, Koji; Okino, Takeshi (Toshiba Corp., Japan). Jpn. Kokai Tokkyo Koho

JP 10301283 A2 19981113 Heisei, 34 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 1997-110706 19970428.

AB The compn. contains a polymer, a light-induced acid generator, and R₁X₁R₂ (R₁ = org. group; X₁ = CO, COO, CONR₃, SO₂, SO₂NR₃, O; R₂ = alicyclic group-contg. group; tertiary C atom in R₂ is directly bonded to X₁; R₃ = H, halo, hydrocarbyl). The method involves the following steps; (1) forming a film on a substrate from the compn., (2) exposing, (3) heating the resulting patterned film, (4) developing the film with an aq. alkali soln., and (5) selectively removing the exposed part. The compn. showed high transparency for short wavelength and good alkali developability and dry etching resistance.

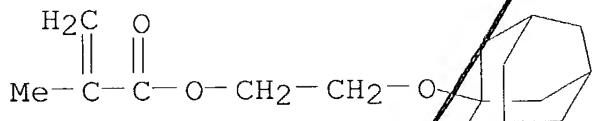
IT 216974-87-7 216974-89-9
 (alkali-developable photoresist for patterning in
 manuf. of semiconductor device)

RN 216974-87-7 ZCPLUS

CN 2-Propenoic acid, 2-methyl-, 2-(tricyclo[3.3.1.13,7]decyloxy)ethyl ester, polymer with (1R,2S,5R)-5-methyl-2-(1-methylethyl)cyclohexyl 2-propenoate and 2-propenoic acid (9CI) (CA INDEX NAME)

CM 1

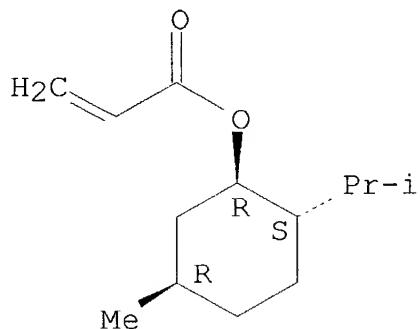
CRN 150567-65-0
 CMF C16 H24 O3



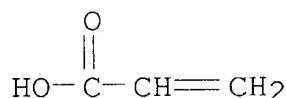
CM 2

CRN 4835-96-5
 CMF C13 H22 O2

Absolute stereochemistry. Rotation (-).



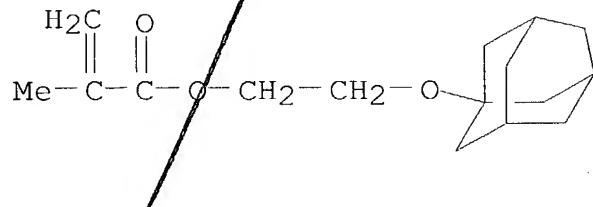
CM 3

CRN 79-10-7
CMF C3 H4 O2

RN 216974-89-9 ZCPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with rel-(1R,2S,5R)-5-methyl-2-(1-methylethyl)cyclohexyl 2-methyl-2-propenoate and 2-(tricyclo[3.3.1.13,7]decyloxy)ethyl 2-methyl-2-propenoate (9CI)
(CA INDEX NAME)

CM 1

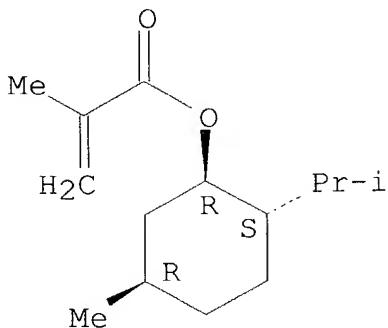
CRN 150567-65-0
CMF C16 H24 O3

CM 2

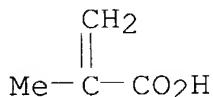
CRN 7372-67-0

CMF C14 H24 O2

Relative stereochemistry.



CM 3

CRN 79-41-4
CMF C4 H6 O2

IC ICM G03F007-039
 ICS C08K005-04; C08K005-20; C08K005-41; C08L033-00; C08L043-02;
 H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 76

ST photoresist alkali developability adamantane carbonate
 additive; cyclohexane carbonate additive photoresist
 alkali developable; furanyladamantane carbonate additive
 photoresist alkali developable; pyranyladamantane carbonate
 additive photoresist alkali developable; menthyl
 methacrylate polymer photoresist alkali developable;
 etching resistance photoresist patterning semiconductor
 device

IT Photoresists
 Semiconductor device fabrication
 (alkali-developable photoresist for patterning in
 manuf. of semiconductor device)

IT 66003-78-9, Triphenylsulfonium triflate 216974-76-4 216974-77-5
 (acid generator; alkali-developable photoresist for

IT patterning in manuf. of semiconductor device)
 174952-51-3 181017-30-1, tert-Butyl methacrylate-menthyl
 methacrylate-methacrylic acid copolymer 194879-32-8 202654-72-6
 216974-78-6 216974-79-7 216974-80-0 216974-81-1 216974-82-2
 216974-83-3 216974-84-4 216974-85-5 216974-86-6
216974-87-7 216974-88-8 **216974-89-9**
 216974-90-2
 (alkali-developable **photoresist** for patterning in
 manuf. of semiconductor device)

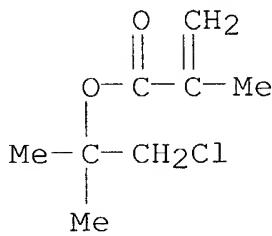
L18 ANSWER 4 OF 7 ZCPLUS COPYRIGHT 2004 ACS on STN
 1998:545694 Document No. 129:223253 Positive-working
photoresist composition. Aogo, Toshiaki; Sato, Kenichiro
 (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP
 10221852 A2 19980821 Heisei, 58 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 1997-24011 19970206.

AB The title compn. comprises a resin having .gtoreq.1 repeating unit
 contg. groups that are decompd. upon active ray or irradn. to
 generate acid, .gtoreq.1 alicyclic group-contg. repeating unit, and
 .gtoreq.1 repeating unit contg. groups that are decompd. by the
 action of acid to increase the solv. in alk. developing solns. The
 compn. shows high sensitivity toward light of wavelength .ltoreq.250
 nm, esp. .ltoreq.220 nm, and high dry etch resistance and provides
 high resln. **resist** patterns with good profile independent
 of the elapse of time from exposure to post-bake.

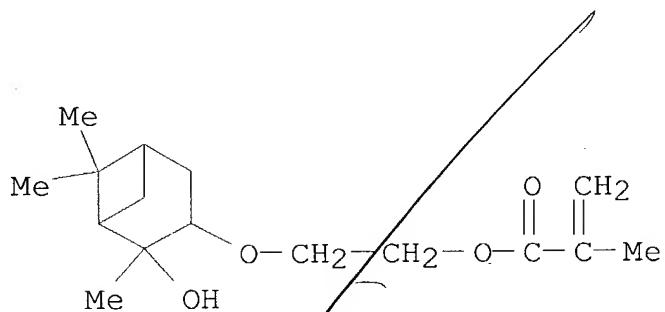
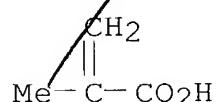
IT **212579-92-5P**
 (photoresist compn. contg. polymer having
 acid-generating group, alicyclic group, and alkali-sol. group)
 RN 212579-92-5 ZCPLUS
 CN Sulfonium, triphenyl-, salt with 3-sulfopropyl 2-methyl-2-propenoate
 (1:1), polymer with 2-chloro-1,1-dimethylethyl 2-methyl-2-
 propenoate, 2-[(2-hydroxy-2,6,6-trimethylbicyclo[3.1.1]hept-3-
 yl)oxy]ethyl 2-methyl-2-propenoate and 2-methyl-2-propenoic acid
 (9CI) (CA INDEX NAME)

CM 1

CRN 212579-91-4
 CMF C8 H13 Cl O2



CM 2

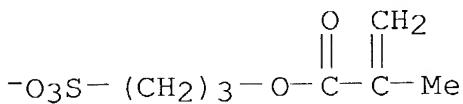
CRN 212579-90-3
CMF C16 H26 O4CM 3
CRN 79-41-4
CMF C4 H6 O2

CM 4

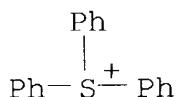
CRN 201683-79-6
CMF C18 H15 S . C7 H11 O5 S

CM 5

CRN 133945-31-0
CMF C7 H11 O5 S



CM 6

CRN 18393-55-0
CMF C18 H15 S

IC ICM G03F007-039
 ICS G03F007-039; G03F007-004; G03F007-033; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 38
 ST photoresist alicyclic polymer; acid generating polymer
 photoresist; alkali soluble polymer photoresist
 IT Positive photoresists
 (photoresist compn. contg. polymer having
 acid-generating group, alicyclic group, and alkali-sol. group)
 IT 212579-87-8P 212579-89-0P **212579-92-5P** 212579-95-8P
 212580-01-3P 212580-02-4P 212580-07-9P 212580-08-0P
 212580-11-5P 212580-14-8P 212580-16-0P 212580-19-3P
 212580-21-7P 212580-24-0P 212580-27-3P 212580-30-8P
 212580-33-1P 212580-36-4P 212580-37-5P 212580-40-0P
 212580-41-1P 212628-39-2P
 (photoresist compn. contg. polymer having
 acid-generating group, alicyclic group, and alkali-sol. group)

L18 ANSWER 5 OF 7 ZCAPLUS COPYRIGHT 2004 ACS on STN
 1997:594565 Document No. 127:248875 Polymers and photosensitive resin
 compositions using the same, and high-resolution heat-resistant
 pattern formation therefrom by far-UV lithography. Iwasa,
 Shigeyuki; Maeda, Katsumi; Nakano, Kaichiro; Hasegawa, Etsuo (NEC
 Corp., Japan). Jpn. Kokai Tokkyo Koho JP 09221526 A2 19970826
 Heisei, 16 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
 1996-309742 19961120. PRIORITY: JP 1995-322039 19951211.
 AB The title polymers are $[\text{CH}_2\text{C}(\text{R}1)(\text{CO}_2\text{R}2)]_x[\text{CH}_2\text{C}(\text{R}3)[\text{CO}_2\text{C}(\text{R}4)(\text{R}5)(\text{OR}6)]_y[\text{CH}_2\text{C}(\text{R}7)(\text{CO}_2\text{H})]_z$ ($\text{R}1, \text{R}3, \text{R}7 = \text{H}, \text{Me}; \text{R}2 = \text{C}_7\text{-13 bridged}$)

cyclohydrocarbyl; R4 = H, C1-2 hydrocarbyl; R5 = C1-2 hydrocarbyl; R6 = C1-12 hydrocarbyl with or without 1-12 alkoxy or C1-13 acyl substituent; x + y + z = 1; x = 0.1-0.9; yr = 0.1-0.7; z = 0-0.7) with Mw 1000-1,000,000 and used with photochem. acid generators for pattern making with light with wavelength 180-220 nm. Fancryl FA-513A, 1-ethoxyethyl methacrylate, and methacrylic acid were copolymerd. in 5:3:2 molar ratio and the resulting copolymer was used with N-hydroxysuccinimide toluenesulfonate with line and space resoln. 0.20 .mu.m at exposure about 30 mJ/cm².

IT 195816-08-1P

(acrylic polymers and photosensitive resin compns. using the same, and high-resoln. heat-resistant pattern formation therefrom by far-UV lithog.)

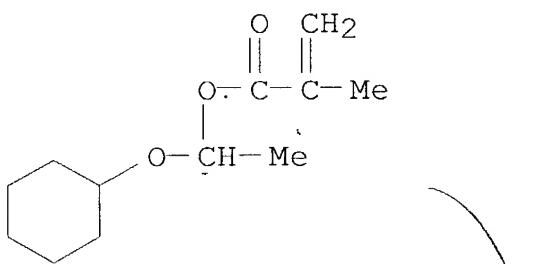
RN 195816-08-1 ZCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with 1-(cyclohexyloxy)ethyl 2-methyl-2-propenoate and octahydro-4,7-methano-1H-inden-5-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 143556-62-1

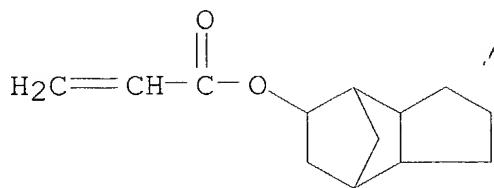
CMF C12 H20 O3



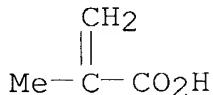
CM 2

CRN 7398-56-3

CMF C13 H18 O2



CM 3

CRN 79-41-4
CMF C4 H6 O2IC ICM C08F220-28
ICS C08F220-06; C08F220-18; C09D133-14; G03F007-039; H01L021-027

CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 74, 76

ST photoresist acrylic far UV lithog

IT Heat-resistant materials

Photoresists

(acrylic polymers and photosensitive resin compns. using the same, and high-resoln. heat-resistant pattern formation therefrom by far-UV lithog.)

IT 182073-92-3P 182073-93-4P 182073-94-5P 182073-95-6P
182073-96-7P 195816-03-6P 195816-05-8P 195816-07-0P
195816-08-1P 195816-10-5P 195816-12-7P 195816-14-9P

(acrylic polymers and photosensitive resin compns. using the same, and high-resoln. heat-resistant pattern formation therefrom by far-UV lithog.)

L18 ANSWER 6 OF 7 ZCAPLUS COPYRIGHT 2004 ACS on STN
1996:422211 Document No. 125:71909 Alkali development-type
photoresist composition. Chiba, Hideki; Saito, Norihiko;
Sano, Kimyasu; Naito, Makiko (Japan Synthetic Rubber Co Ltd, Japan).
Jpn. Kokai Tokkyo Koho JP 08078318 A2 19960322 Heisei, 12 pp.
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-240504 19940908.AB The title photoresist compn. contains (a) a copolymer comprising unsatd. carboxylic acids 5-40, radically polymerizable OH-contg. compds. 10-40, (meth)acrylic acid cyclic alkyl esters 0-60, and other radically polymerizable compds. 20-60 wt.%, (b) a polymerizable compd. having \geq 1 ethylenic unsatd. double bond, and (c) a photopolyrn. initiator. The compn. shows good alkali developability and high resoln. even if its film is thick and provides high-quality patterns with good resistance to plating solns., chems., and soft solder, and is useful for manuf. of semiconductor devices. Thus, a photoresist comprised methacrylic acid-2-hydroxyethyl methacrylate-dicyclopentanyl methacrylate-styrene-1,3-butadiene copolymer, Aronix M-8060

(monomer), Lucirin TPO and Irgacure 651 (photopolyrn. initiator).

IT 178461-28-4P, Acrylic acid-dicyclopentanyloxyethyl
methacrylate-2-hydroxyethyl acrylate-isoprene-styrene copolymer
(alkali-developable photoresist compn.)

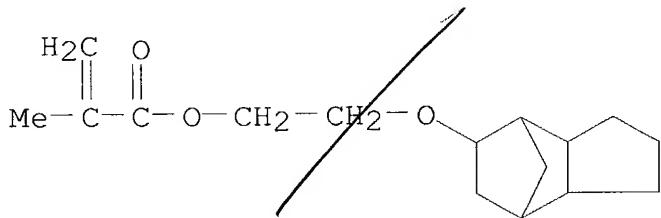
RN 178461-28-4 ZCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[(octahydro-4,7-methano-1H-inden-5-
yl)oxy]ethyl ester, polymer with ethenylbenzene, 2-hydroxyethyl
2-propenoate, 2-methyl-1,3-butadiene and 2-propenoic acid (9CI) (CA
INDEX NAME)

CM 1

CRN 88449-54-1

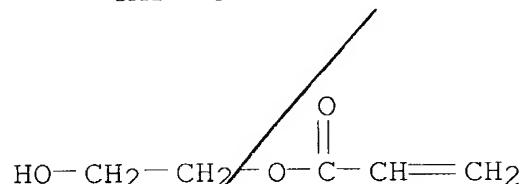
CMF C16 H24 O3



CM 2

CRN 818-61-1

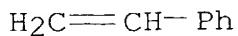
CMF C5 H8 O3



CM 3

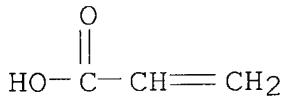
CRN 100-42-5

CMF C8 H8



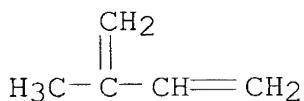
CM 4

CRN 79-10-7
 CMF C3 H4 O2



CM 5

CRN 78-79-5
 CMF C5 H8

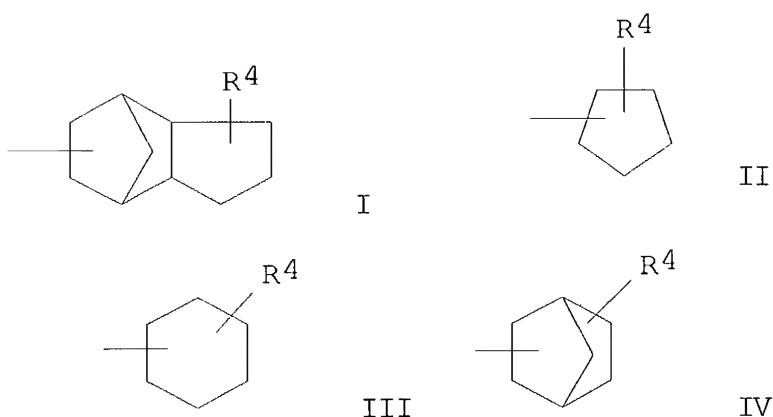


IC ICM H01L021-027
 ICS C08L033-02; C08L033-04; C09D004-00; G03F007-027; G03F007-028;
 G03F007-033; H05K003-06; H05K003-18; H05K003-28
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 76
 ST alkali development **photoresist** compn
 IT **Resists**
 (photo-, alkali-developable **photoresist** compn.)
 IT 178461-26-2P, 1,3-Butadiene-dicyclopentanyl methacrylate-2-
 hydroxyethyl methacrylate-methacrylic acid-styrene copolymer
 178461-27-3P, 1,3-Butadiene-cyclohexyl methacrylate-2-hydroxy-3-
 phenoxypropyl methacrylate-methacrylic acid-styrene copolymer
178461-28-4P, Acrylic acid-dicyclopentanoxethyl
 methacrylate-2-hydroxyethyl acrylate-isoprene-styrene copolymer
 178461-29-5P, 2-Hydroxyethyl methacrylate-isobornyl
 methacrylate-isoprene-methacrylic acid-2-methylstyrene copolymer
 178461-30-8P, 2-Hydroxyethyl 2-(acryloyloxy)ethyl
 phthalate-1,3-butadiene-crotonic acid-dicyclopentanyl
 methacrylate-glycidyl methacrylate-styrene copolymer
 (alkali-developable **photoresist** compn.)

L18 ANSWER 7 OF 7 ZCAPLUS COPYRIGHT 2004 ACS on STN
 1995:746496 Document No. 123:242079 Photosensitive resin compositions
 containing vinyl monomers having cycloalkyl group and photosensitive
 films therefrom. Sawabe, Masaru; Ishimaru, Toshiaki; Kobayashi,

Akihiro (Hitachi Chemical Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07140650 A2 19950602 Heisei, 9 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1993-144765 19930616.

GI



AB The resin compns. contain (A) a polymer, obtained by copolyrn. of (a) $\text{CH}_2:\text{CR}_1\text{CO}_2(\text{R}_2\text{O})_n\text{R}_3$ ($\text{R}_1 = \text{H}$, halo, lower alkyl; $\text{R}_2 = \text{C}_1\text{-}5$ alkylene; $\text{R}_3 = \text{I}, \text{II}, \text{III}, \text{IV}$; $\text{R}_4 = \text{H}$, halo, lower alkyl; $n = 1\text{-}23$) 5-85, (b) vinyl monomers having carboxy group 15-30, (c) vinyl monomers other than (a) and (b) 0-80 parts at total amt. of (a), (b), and (c) 100 parts, (B) photopolymerizable unsatd. compds. having ≥ 2 ethylenic bond, and (C) a photopolymn. initiator. Also claimed are photosensitive films obtained by laminating a support film with the above compn. The compns. provide **resists** which show good adhesion to metal, high plating resistance, flexibility, good **resist** profile, and peeling property.

IT 168061-29-8 168061-31-2

(photoresist compns. contg. acrylic polymers having poly(alkylene glycol) cycloalkyl ether acrylates as monomer unit with good adhesion to metal, high plating resistance, peeling property, flexibility, and **resist** profile)

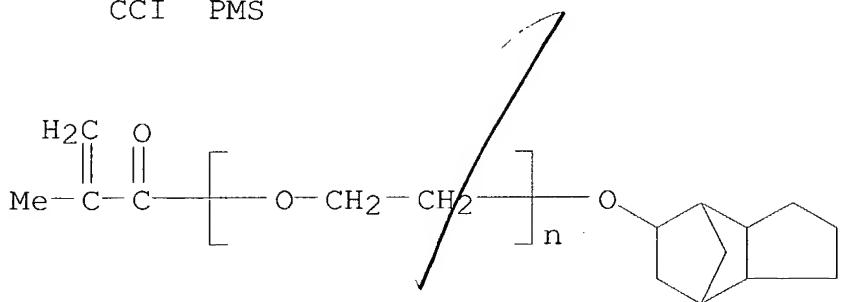
RN 168061-29-8 ZCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with methyl 2-methyl-2-propenoate and α -[(2-methyl-1-oxo-2-propenyl)- ω -[(octahydro-4,7-methano-1H-inden-5-yl)oxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

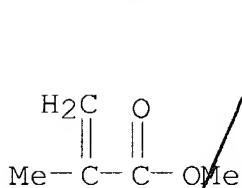
CRN 168061-28-7

CMF (C₂ H₄ O)_n C₁₄ H₂₀ O₂
 CCI PMS

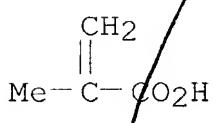


CM 2

CRN 80-62-6
 CMF C₅ H₈ O₂



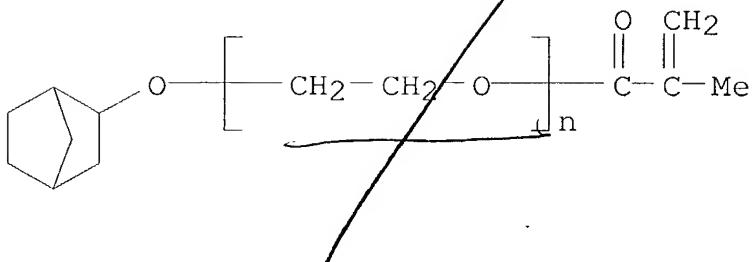
CM 3
 CRN 79-41-4
 CMF C₄ H₆ O₂



RN 168061-31-2 ZCPLUS
 CN 2-Propenoic acid, 2-methyl-, polymer with methyl
 2-methyl-2-propenoate and .alpha.- (2-methyl-1-oxo-2-propenyl)-
 .omega.- (bicyclo[2.2.1]hept-2-yloxy) poly(oxy-1,2-ethanediyl) (9CI)
 (CA INDEX NAME)

CM 1

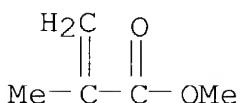
CRN 168061-30-1
 CMF (C₂ H₄ O)_n C₁₁ H₁₆ O₂
 CCI PMS



CM 2

CRN 80-62-6

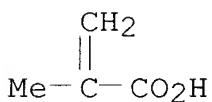
CMF C5 H8 O2



CM 3

CRN 79-41-4

CMF C4 H6 O2



IC ICM G03F007-027

ICS G03F007-004; G03F007-028; G03F007-033; G03F007-038;
H01L021-027; H05K003-00; H05K003-18CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)ST resist polyoxalkylene cycloalkyl ether acrylate; alkali
developable resist cycloalkoxyalkyl acrylate

IT Resist

(photo-, alkali-developable; photoresist compns. contg.
acrylic polymers having poly(alkylene glycol) cycloalkyl ether
acrylates as monomer unit with good adhesion to metal, high
plating resistance, peeling property, flexibility, and
resist profile)IT 54380-33-5, .gamma.-Chloro-.beta.-hydroxypropyl .beta.-
methacryloyloxyethyl o-phthalate

(MECHPP; **photoresist** compns. contg. acrylic polymers having poly(alkylene glycol) cycloalkyl ether acrylates as monomer unit with good adhesion to metal, high plating resistance, peeling property, flexibility, and **resist profile**)

IT 41637-38-1, BPE 10 168061-27-6 **168061-29-8**

168061-31-2 168061-33-4

(**photoresist** compns. contg. acrylic polymers having poly(alkylene glycol) cycloalkyl ether acrylates as monomer unit with good adhesion to metal, high plating resistance, peeling property, flexibility, and **resist profile**)